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Multi target directed ligand: An approach to treat Alzheimer's disease

Priti Jain
Birla Institute of Technology and Science, India

Alzheimer's disease (AD) is a complex neuro-degenerative disorder with a multifaceted pathogenesis. It is believed to affect around 107 million population worldwide by 2050 and is fourth most common cause of death in elderly population. Present paradigm of "one compound, one target" has failed to stop or delay the progression of disease because of the different targets involved in AD like amyloid precursor protein(APP), β-secretase-1(BACE-1), glycogen synthase kinase3β, tau protein, histone deacetylase etc. This therefore supports the application of multi-target-directed ligand approach in the treatment of AD. The strategy involves designing the hybrids by linking structurally active moieties interacting with different targets. Each pharmacophore of these new drugs should retain the ability to interact with its specific site(s) on the target and consequently, produce specific pharmacological responses. This combination therapy is being used to treat various other disorders such as AIDS, atherosclerosis, cancer and depression. The approach could be a break-through for the development of new drugs capable of addressing the biological complexity of this disorder.

Biography

Priti Jain is pursuing Ph.D. in the field of Alzheimer's disease from BITS, Pilani, India. She is involved with the group since last 4 years. Before joining Ph.D., she had worked with Glenmark Research Centre for around 3 years (an esteemed Indian pharmaceutical company). She has published 3 papers related to QSAR studies and also on Alzheimer's disease. She is trying to do computational studies of novel BACE-1 inhibitors and synthesize the same molecules.

jain1199@gmail.com